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EXAMINER
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TRUONG, LECHI

ART UNIT	PAPER NUMBER
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2126

DATE MAILED: 12/11/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Applicati n N .

09/896,206

Applicant(s)

CIERNIAK, MICHAL

Examiner

LeChi Truong

Art Unit

2126

-- The MAILING DATE of this c mmunication appears n the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 January 2003 .
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All   b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_ .
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ .                      6) ☐ Other: \_\_\_\_\_ .

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. Claims 1, 7, 8, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al (US. Patent 5,754,862) in view of Jordan (US. Patent 6,016,392).

As to claim 1, Jones teaches X (a virtual function, col 5, ln 15-67), a class (the class, col 5, ln 15-53/col 7, ln 1-25col 12, ln 35-67), implement (implement, col 5, ln 44-67), a function (the function members 603,604,605,607, col 12, ln 35-67/ Fig. 6), an X vtable (virtual function table, col 5, ln 15-53/col 7, ln 1-25col 12, ln 35-67/ Fig. 6), a first pointer (B1:fa11 603, col 12, ln 35-67/ Fig. 6), an object (the data structure 601, col 12, col 5, ln 15-53/col 7, ln 1-25col 12, ln 35-67/ Fig. 6), an instance of the class( instance of class, col 5, ln 43-59), second pointer(A1::vfptr, col 11, ln 50-67, col 12, ln 35-67, Fig. 6).

Jones does not explicit teach X as the term “ interface” and vtable as interface vtable. However, Jordan teaches interface, an interface ID with the Vtable 416(col 3, ln 33-67/ Fig. 4).

It would have been obvious to apply the teaching of Jordan to Jones in order to provide an interface list with information about which interfaces are supported on each class.

As to claim 7, Jones does not explicit teach the term the interface vtable is indexed by the name of the function. However, Jordan teaches an interface ID with the Vtable 416(col 3, ln 33-67/ Fig. 4).

It would have been obvious to apply the teaching of Jordan to Jones in order to identify which interfaces are supported on each class.

As to a method of claim 8, refer to the rejection of claim 1. Further, Jones teaches a invoke a function (invoking the function member, col 20, ln 1-34).

Jones does not teach the term a request. However, Jordan teach request (call, col 5, ln 45-67).

It would have been obvious to apply the teaching of Jordan to Jones in order to invoke the member function of an object to implement an interface.

**As to an article of manufacture of claim 10**, see the rejection of claim 8.

3. Claims 2, 3, 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al (US. Patent 5,754,862) in view of Jordan (US. Patent 6,016,392) and further in view of AP (Arrays, pointers, pointer arithmetic).

**As to claim 2**, Jones does not teach a third pointer points to a canonical base address. However, AP teaches the new pointer point to X [1]. (Sec 7.3, page 1-3).

It would have been obvious to apply the teaching of AP to Jones in order to allocate the specified number of contiguous cells of the indicated type.

**As to claim 3**, Jones does not teach the pointer is located at a predefined offset from the second pointer, and adjacent to the second pointer. However, AP teaches the new pointer equals the original value of the pointer by increased by the size of type involved (sec: 7.3, page 1).

It would have been obvious to apply the teaching of AP to Jones in order to allocate the specified number of contiguous cells of the indicated type.

**As to claim 4**, Jones does not teach the third pointer is adjacent to the second pointer. However, AP teaches X+0, X+1 pointer (sec 7.3, page 1-3).

It would have been obvious to apply the teaching of AP to Jones in order to allocate the specified number of contiguous cells of the indicated type.

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4. Claims 5, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al (US. Patent 5,754,862) in view of Jordan (US. Patent 6,016,392) and further in view of Kathleen Fisher et al (What is an Object – Oriented Programming Language?)

As to claim 5, Jones does not explicit teach the term a class vtable, fourth pointer (&(B3:Fa11. Fig. 14). However, Kathleen teaches class's Vtable, the A vtable contains pointers to the methods (sec: 2.3, page 7/ Fig. 1/Fig. 2).

It would have been obvious to apply the teaching of Kathleen to Jones in order to reduce the cost of method lookup to a simple indirection without search, followed by an ordinary function call.

As to claim 6, Jones teaches vtable is indexed by the name of function (the virtual function name afl1, col 14, ln 1-55, Fig, 10).

2. Claims 9, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al (US. Patent 5,754,862) in view of Jordan (US. Patent 6,016,392) and further in view of Danel Liang (Java Programming).

As to claim 9, Jones does not teach an argument. However, Liang teaches an argument (page 118, sec: passing objects to methods).

It would have been obvious to apply the teaching of Liang to Jones in order to provide great flexible, modularity, and reusability for developing software.

As to the article of manufacture of claim 11, see the rejection of claim 10.

5. Claims 12, 13, 15, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over TO (Object Reference casting) in view of AP (Arrays, pointers, pointer arithmetic) and further in view

**As to claim 12**, TO teaches a first reference (reference, page 2, ln 26-50), an object (object, page 2, ln 26-50), a type (M1, page 2, ln 26-50), an interface (an interface, ln 26-50), a request to cast (cast, page 2, ln 26-50), and a type defined by a class (class type, page 2, ln 26-50).

TO does not teach a pointer contained in the object, the pointer configured to point to a canonical base address of object. However, AP teaches the new pointer point to X [1]. (Sec 7.3, page 1-3).

It would have been obvious to apply the teaching of AP to Jones in order to allocate the specified number of contiguous cells of the indicated type.

**As to claim 13**, TO does not teach the pointer is located at a predefined offset from the Second pointer, and adjacent to the second pointer. However, AP teaches the new pointer equals the.

It would have been obvious to apply the teaching of AP to TO in order to allocate the specified number of contiguous cells of the indicated type.

**As to an article of manufacture of claim 15**, see the rejection of claim 12.

**As to an article of manufacture of claim 16**, see the rejection of claim 13.

6. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over TO (Object Reference casting) in view in view of AP (Arrays, pointers, pointer arithmetic) and further in view of Gartner et al (US. Patent 6,421,681 B1).

**As to claim 14**, TO does not teach return the type defined by casting. However, Gartner teaches return ... cast to object (col 18,ln 1-20).

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It would have been obvious to apply the teaching of TO to Gartner in order to make method for dispatch of interface calls more consistent.

7. *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LeChi Truong whose telephone number is (703) 305 5312. The examiner can normally be reached on 8 - 5.

Fax phone: AFTER\_FINAL faxes must be signed and sent to: (703) 746-2738, OFFICAL faxes must be signed and send to: (703) 746-7239, NON OFFICIAL faxes should not be signed, please send to: (703) 746-7240

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305 9000.

LeChi Truong  
December 5, 2003



**JOHN FOLLANSBEE  
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